

FIG. 1(A) (1)

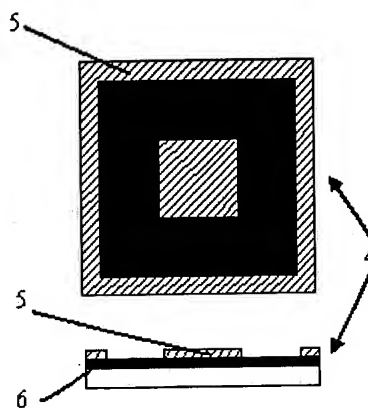


FIG. 1(A)(2)

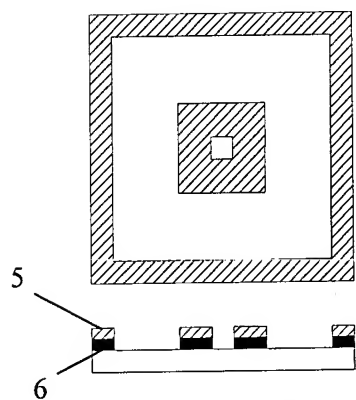


FIG. 1(B)(1)

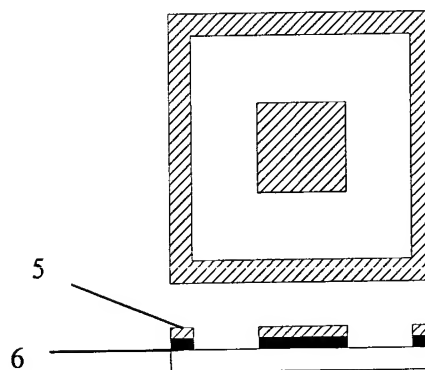


FIG. 1(B)(2)

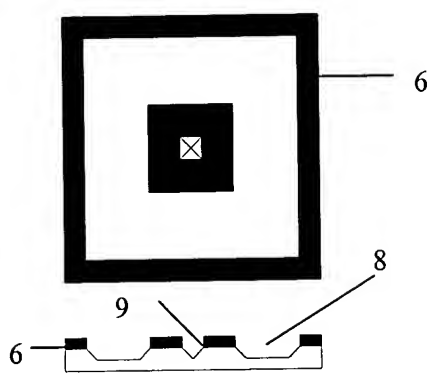


FIG. 1(C)(1)

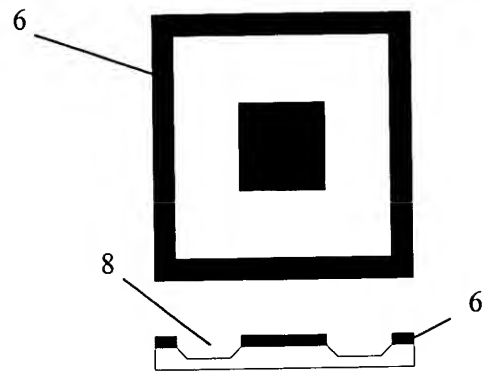


FIG. 1(C)(2)

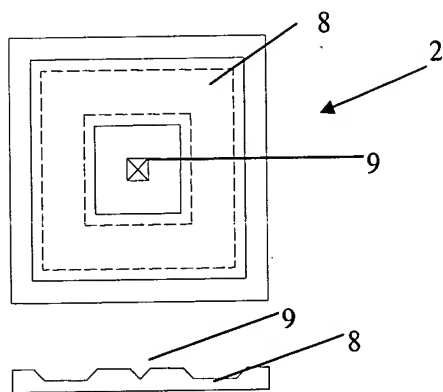


FIG. 1(D)(1)

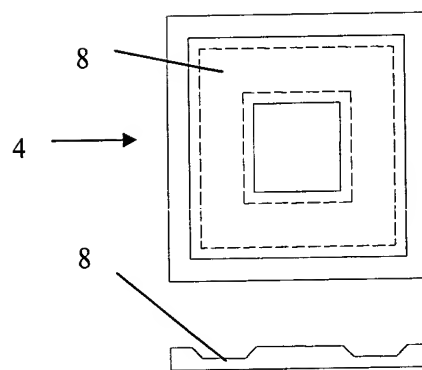
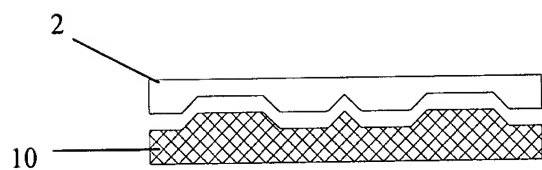
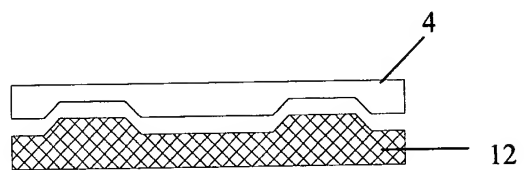


FIG. 1(D)(2)



Si

FIG. 1(E)(1)



PMMA

FIG. 1(E)(2)

Metal
  PMMA

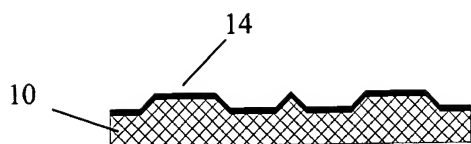


FIG. 1(F)(1)

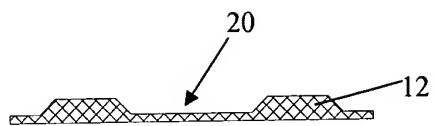


FIG. 1(F)(2)

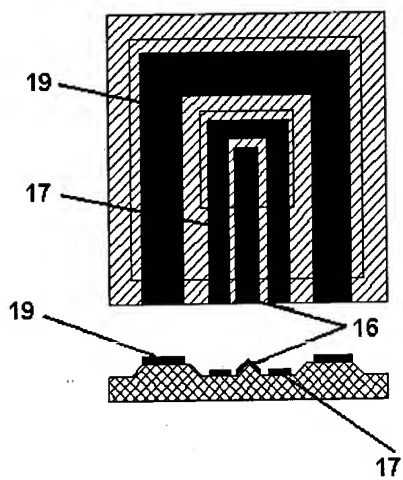


FIG. 1(G)(1)

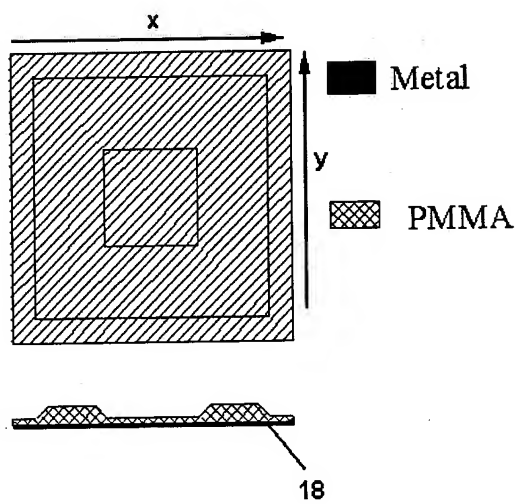
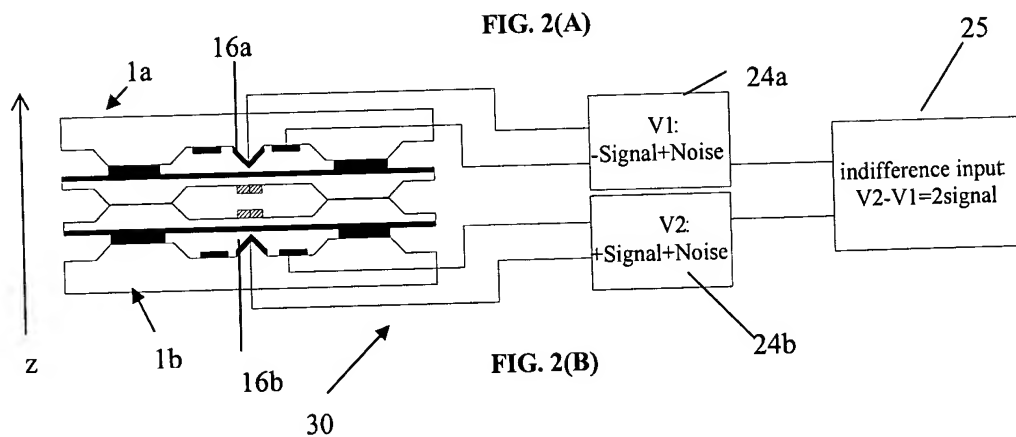
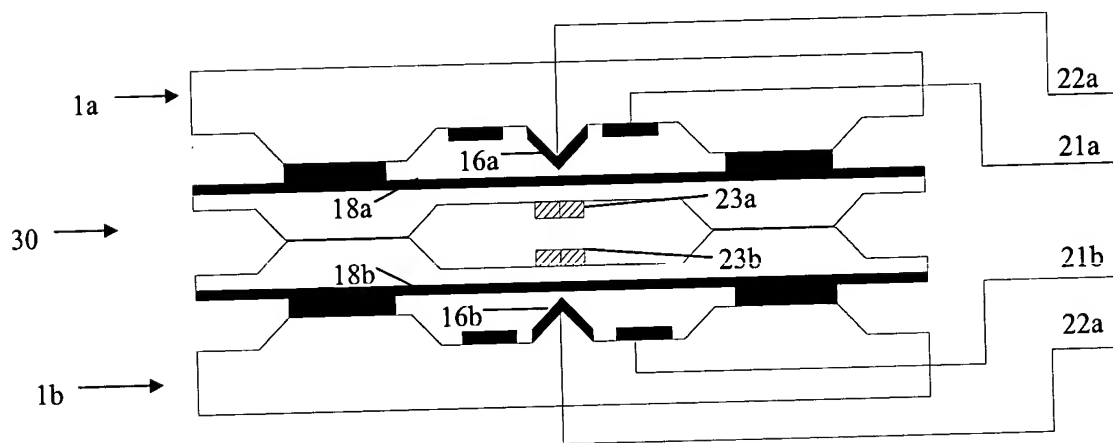
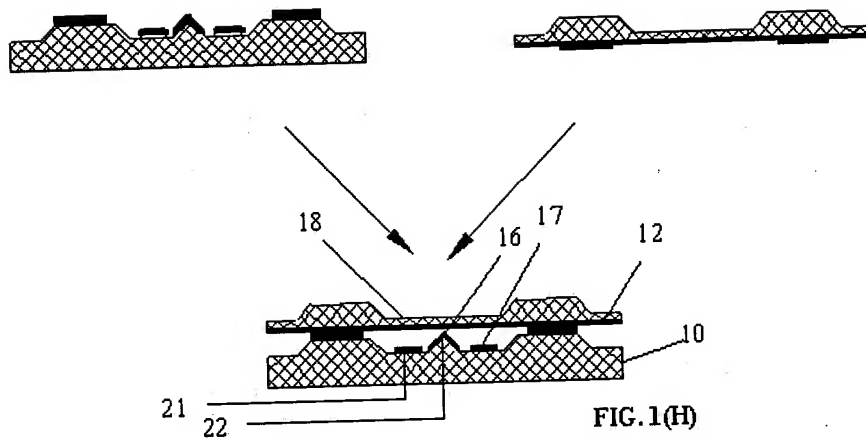


FIG. 1(G)(2)



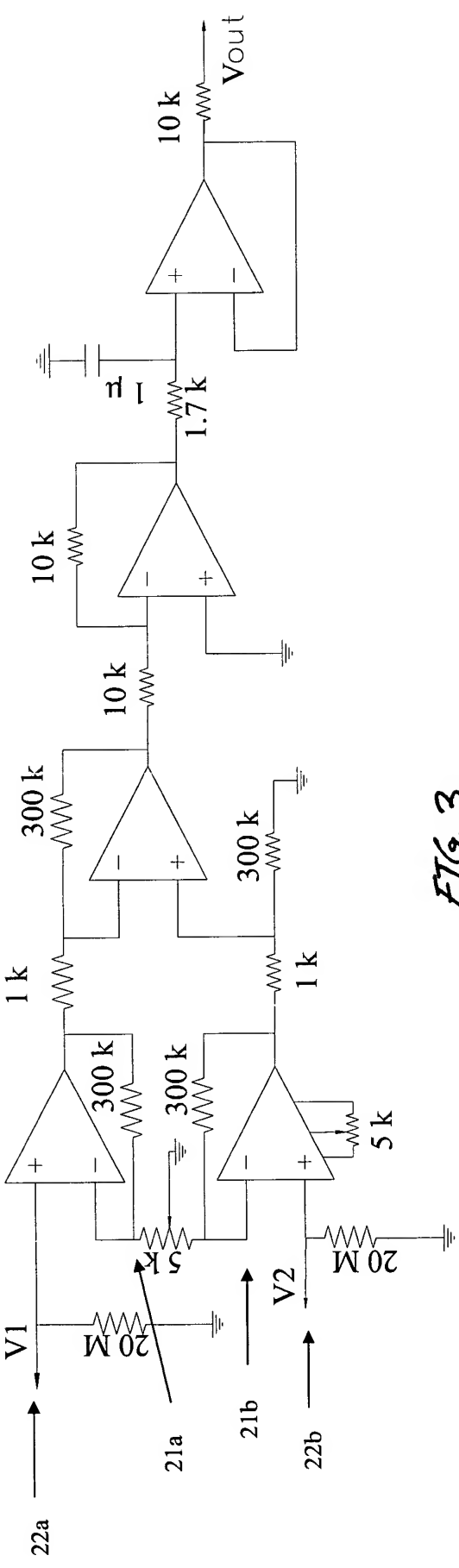
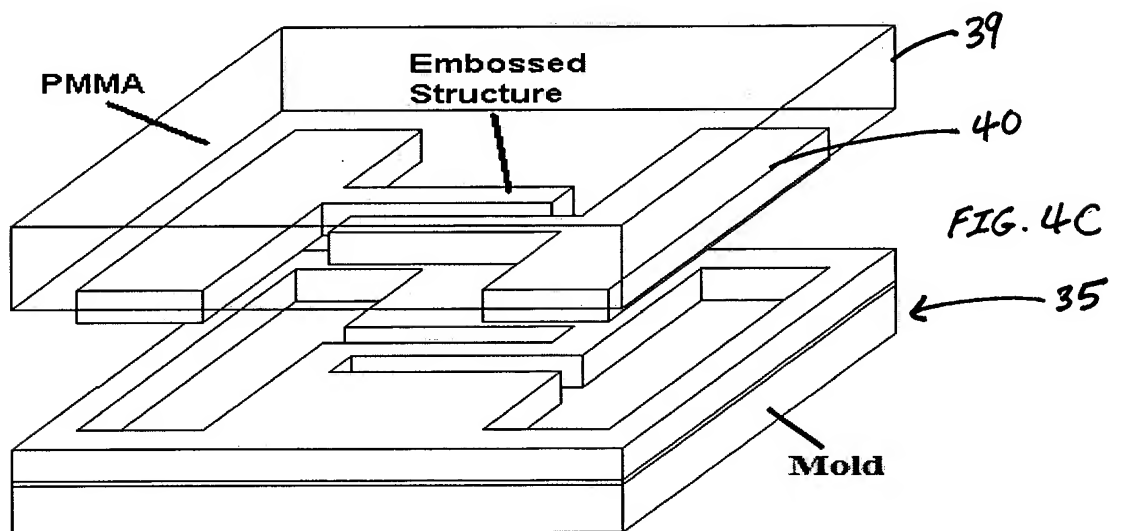
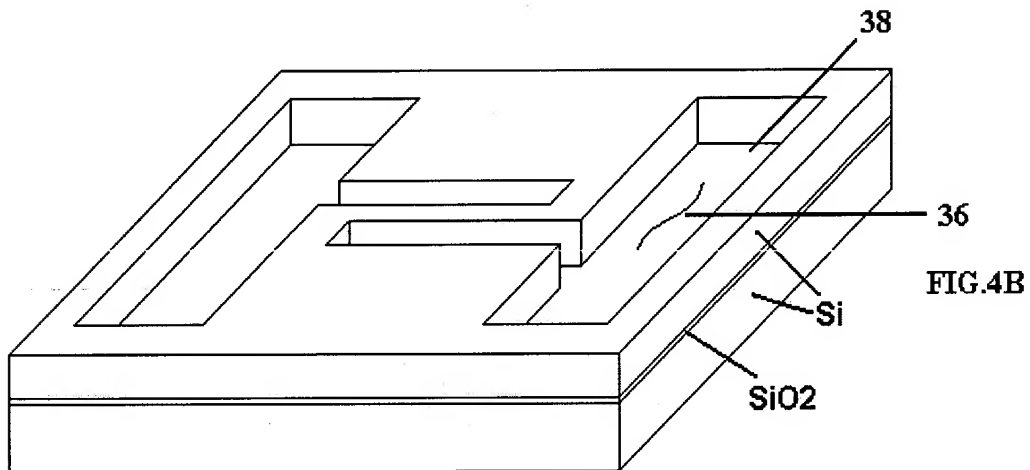
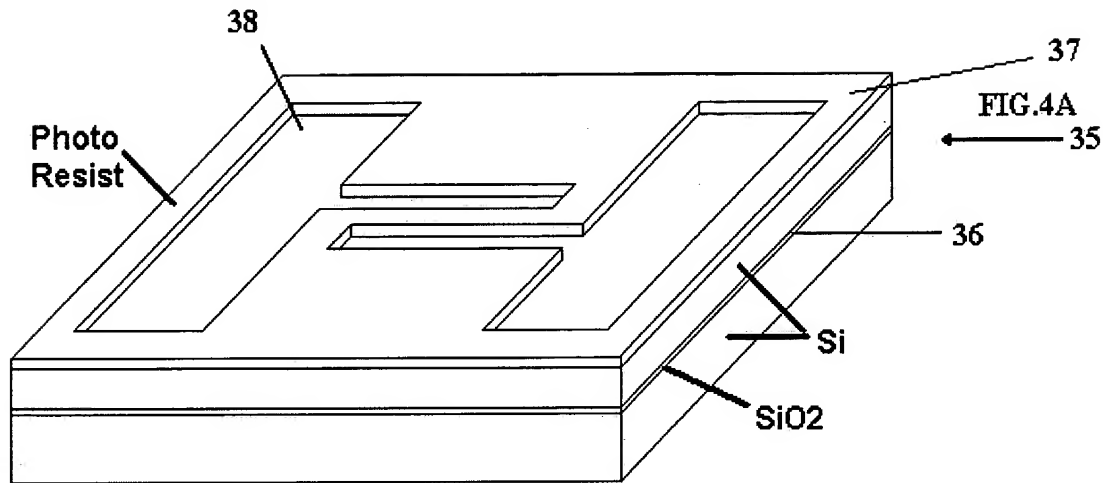
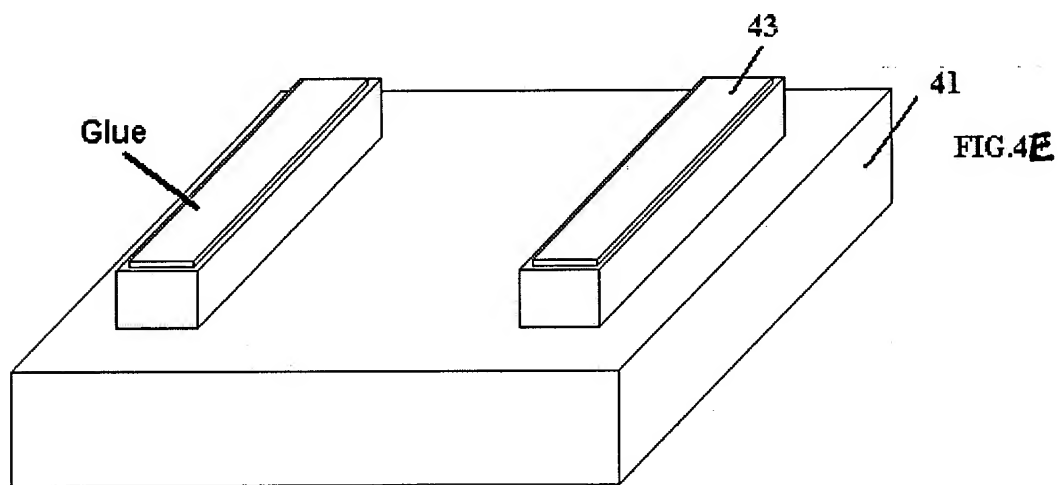
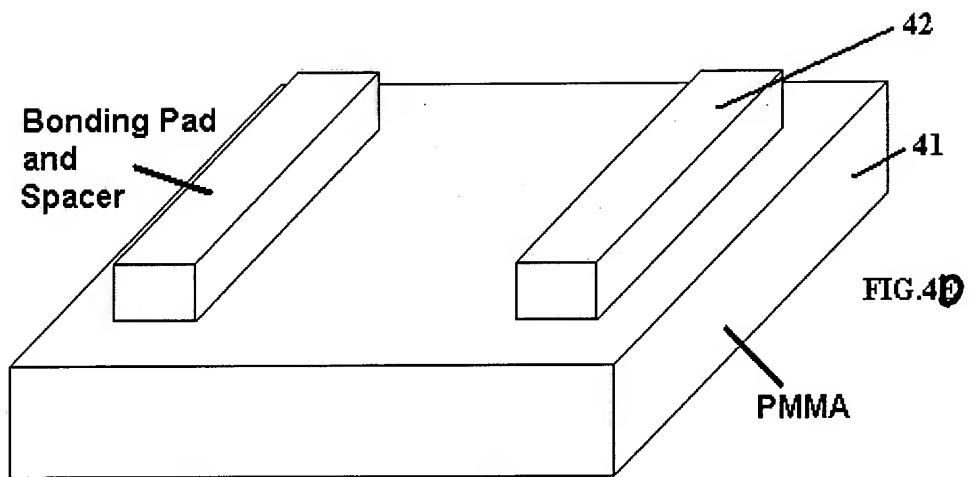
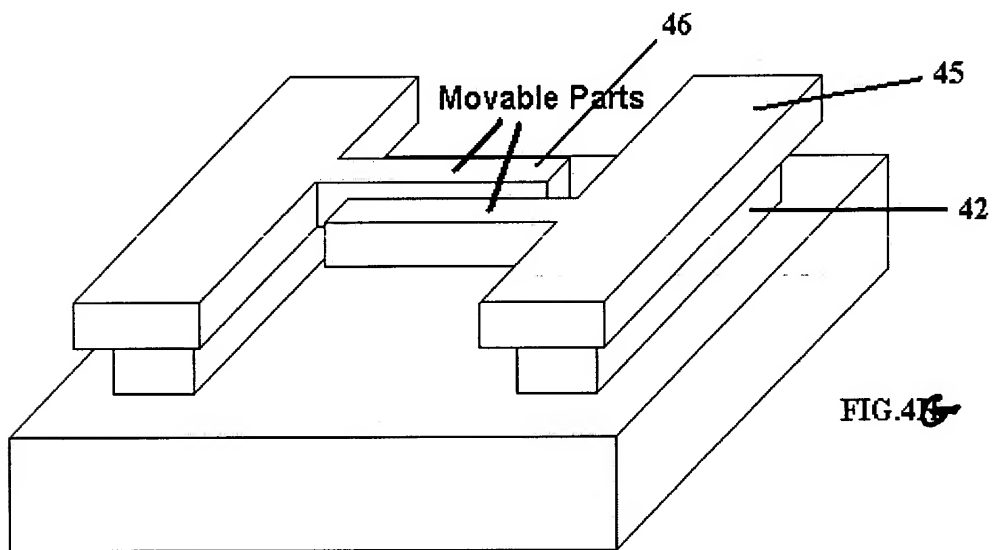
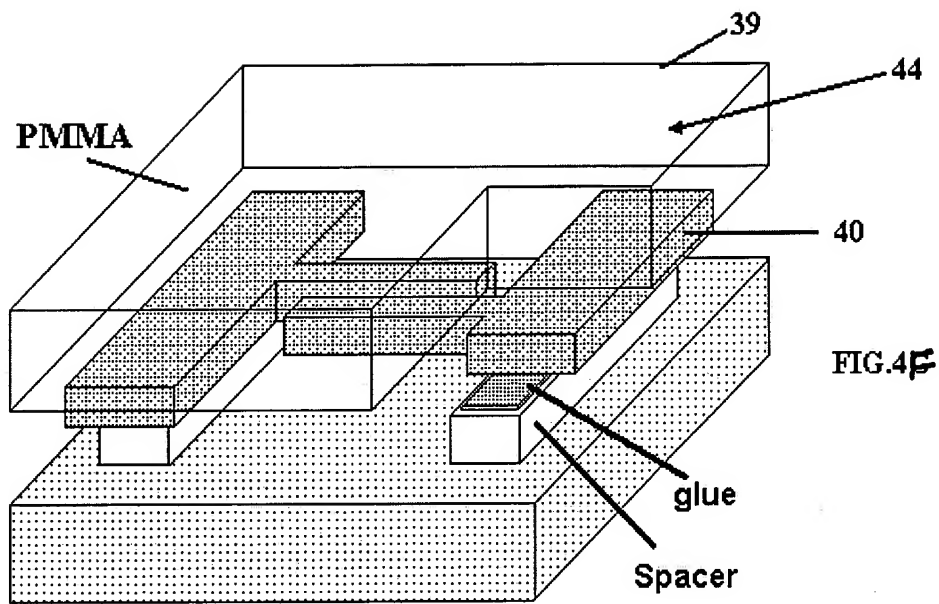


FIG. 3

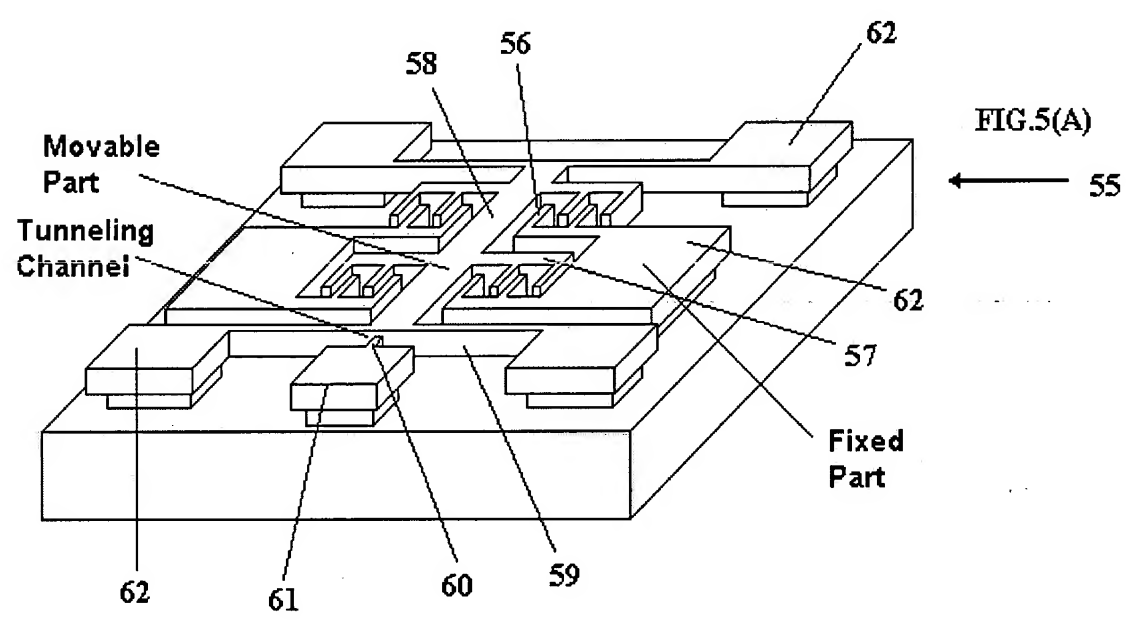
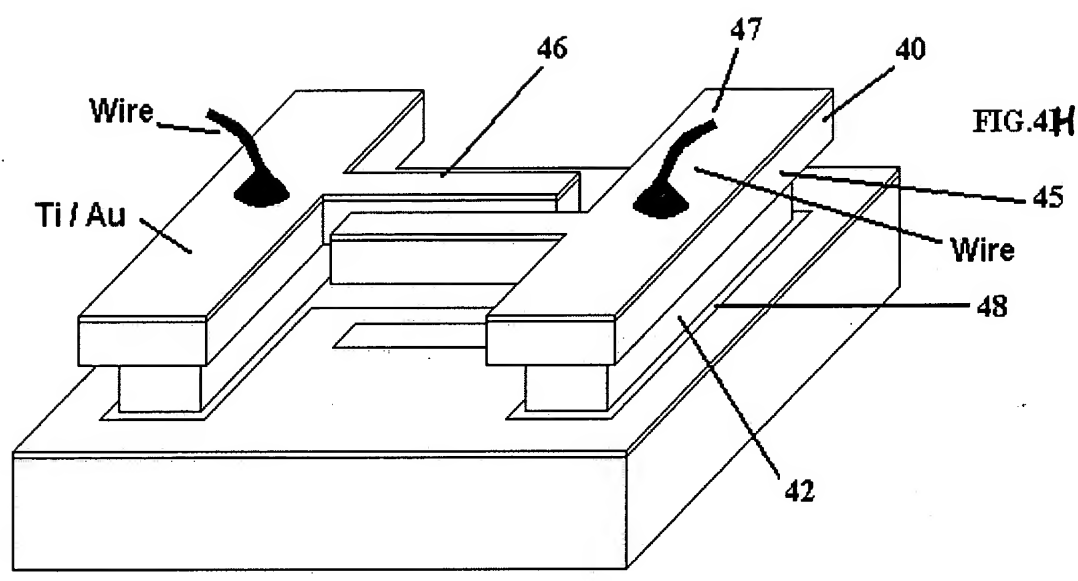
Process Flow Chart Illustration











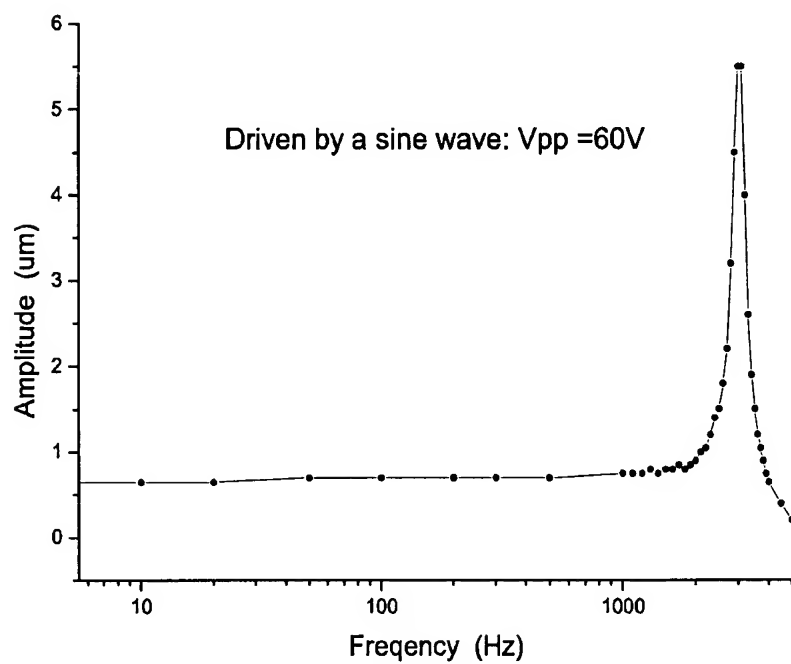
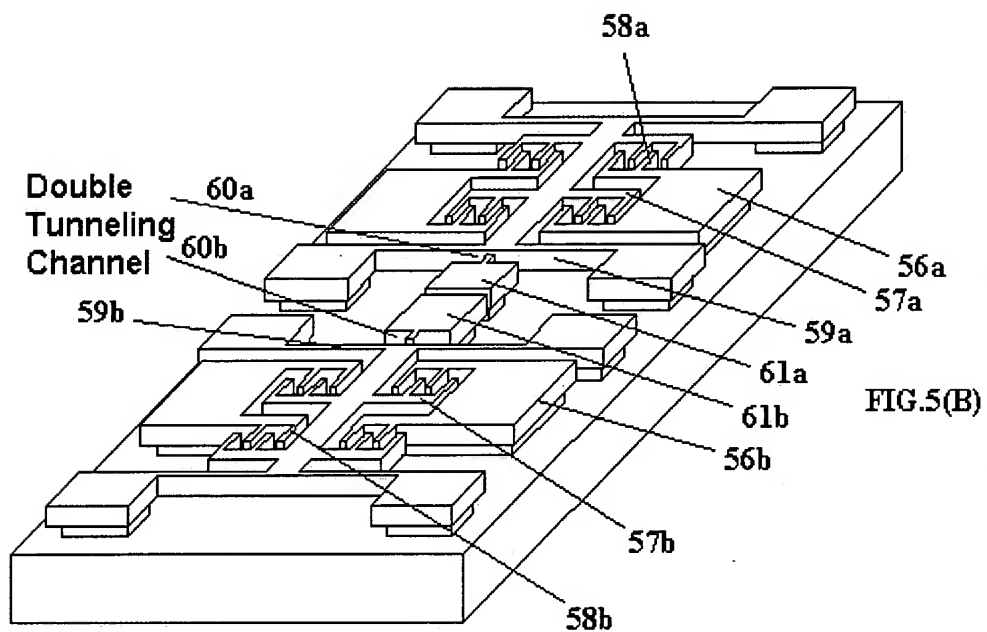
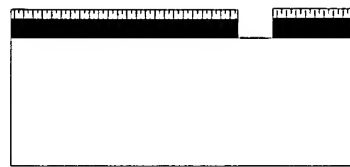
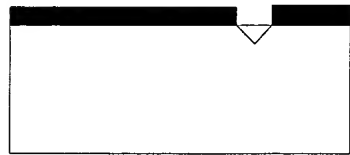


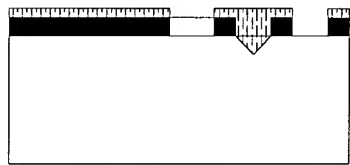
FIG6



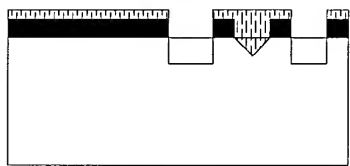
8 (a)



8 (b)



8 (c)



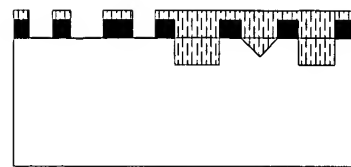
8 (d)

PR

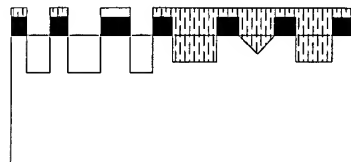
SiO<sub>2</sub>

Si

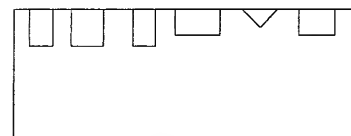
PMMA



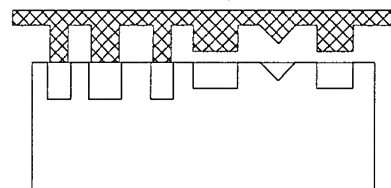
8 (e)



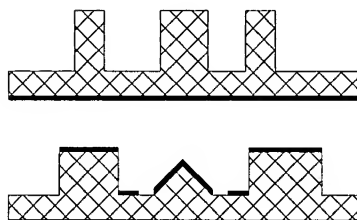
8 (f)



8 (g)



8 (h)



8 (j)

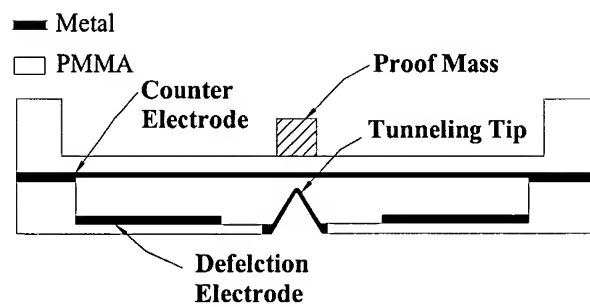


FIG. 8 (k)

Cross section of a membrane type PMMA-based tunneling sensor

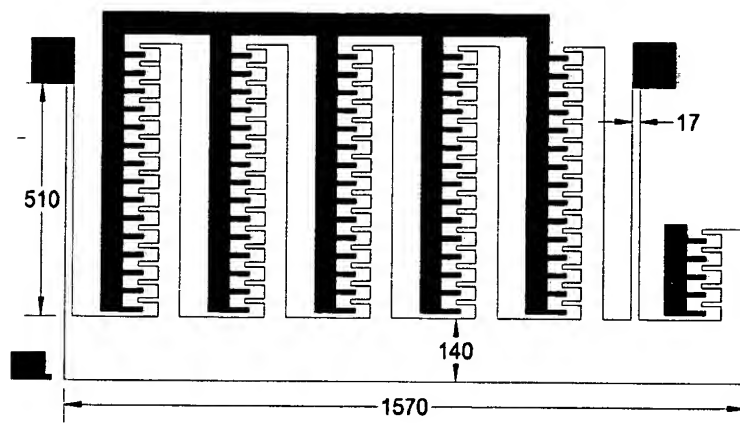


FIG. 7

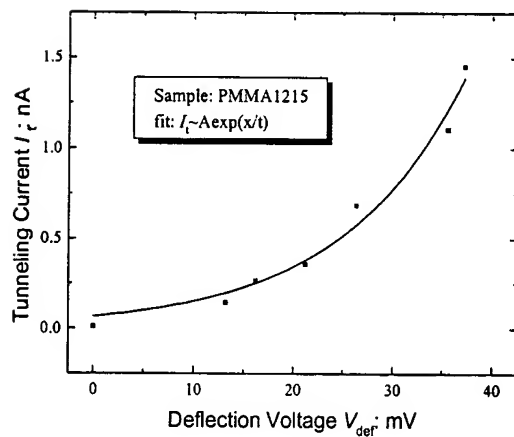


FIG. 9 The exponential relationship between tunneling currents and applied deflection voltages